

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Lederberg, J.

Project: GENLIB1

Department: Genetics

Project Description: This project contains the statistical and miscellaneous programs used by the Genetics Department.

Statistical programs: General statistical analysis for the calculations of sum, mean, standard deviation, the analysis of variance, chisquare and probability of chisquare distribution, correlation and regression analysis, the normal distribution with the same mean and standard deviation for fitting a curve.

Plotting programs: Plot bar graph in 100 positions, plot of percentage distribution, plot by function scaled to the range of 0 to 100, plot of multivalued function allows the choice and supersition of several characters. Flag is inserted on the chart when underflow or overflow occurred.

Sorting programs: Sorting a vector in ascending order, sort array and alphabetical informations.

Name: Luetscher, J.

Project: Blood_Pr

Department: Medicine - Metabolic Research

Project Description: This research project deals with the secretion and metabolism of adrenal hormones. Various steroid hormones, catecholamines, and trophic hormones are measured under different conditions of sodium loading or sodium depletion. The project attempts to define and relate groups of measurements which assist in the identification of curable forms of hypertension.

The ACME system is used in this project in several ways:

- 1) To assist in the calculation of laboratory data;
- 2) To interpret the data: (a) Simulation of complex systems, (b) Statistical analysis, (c) Analysis of clinical information.
- 3) To store information at various stages of a sequential process, and for collection and analysis of the large amount of clinical and laboratory data which accumulates during a long investigation;
- 4) To aid in research training of fellows and staff, first in principles and techniques of computer use, and subsequently in practical applications.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Luzzati, L.

Project: GRAGSON

Department: Pediatrics

Project Description: Programs previously utilized for statistical analysis of chromosome measurements in a family with chromosomal abnormalities are now being used for an ongoing study of the morphology of the late replicating X chromosome. Programs are also used for another ongoing study of synchronization of human lymphocytes in culture.

The use of the ACME computer for the study of children with birth defects continues. In addition, a program is now available for the storage of anthropometric data on all patients with congenital defects. A study of anthropometric measurements and dermatoglyphic patterns of sixty children with cleft lip and/or palate, utilizing the data stored in the computer and computer-assisted statistical analysis, has been completed. By using computer information, we have been able to define certain characteristics of body configuration in children with clefts. Further similar studies in other syndromes are now in progress.

Name: Melges, F.

Project: TEMPO

Department: Psychiatry

Project Description: This is a study to relate changes in temporal experience to changes in psychopathological symptoms such as depersonalization and delusions. The plan is to discover how aberrations in temporal sequencing and distinguishing memories from perceptions and expectations relate to the emergence of definable psychopathological processes. The overall notion for a number of sub-projects is: confusing past, present, and future underlies the central symptoms of psychosis.

Sub-projects involve specific attention to drug-induced psychoses and certain symptoms of psychoses, especially depersonalization, changes in body image, paranoid delusions, and feelings of influence or alien control. Previous work has demonstrated that this approach is highly useful for understanding psychotic processes.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Nall, L. (P.I.: Farber, E.)

Project: PSORIASI

Department: Dermatology

Project Description: Psoriasis is a chronic, scaling skin disease of unknown etiology, which affects approximately 4% of the general population. It is a lifetime disorder which does not take life, but indeed destroys it for all age groups.

This project involves an investigation of the epidemiology of the disease. A questionnaire survey has been conducted from 1959 to date. Presently, work is being done on Series II, III, and IV of the questionnaire survey. Follow-up studies on the familial incidence of psoriasis and the relationship of psoriasis to other diseases are being done (i.e., arthritis, diabetes, throat infection). The findings from Series are now being handled by ACME's 360/50 computer.

Name: Reaven, G.

Project: DISPLAY

Department: Medicine - Metabolism

Project Description: ACME is used for 1) Derivation of a three compartment model describing disappearance of plasma insulin, 2) Evaluation of the dog as an experimental model for study of insulin distribution in man, and 3) Digital on-line computer display to investigate the structure of metabolic systems. Models of glucose, insulin, and triglyceride kinetics as related to diabetes mellitus and atherosclerosis are being developed. Clinical data obtained from tracer studies are analyzed by the ACME computer through five states of development. The project DISPLAY includes the third and fourth stage. The third stage automatically obtains the parameters for a linear sum of constant coefficients of a system of linear differential equations. The results are used for the fourth stage. In this phase, the parameters are used for calculation of a theoretical curve which is displayed on a CRT. It is then compared with data which also appears on the CRT. The results of these two stages allow the changing of the parameters until a satisfactory visual fit is obtained. Similar analysis with respect to triglyceride metabolism and extension of the insulin work are now being performed. Stage four is being extended and stage five developed for analysis of non-linear metabolic models.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Stark, G.

Project: CHAOS

Department: Biochemistry

Project Description: ACME serves two primary functions. First, it is used to analyze data generated from steady state kinetic experiments on enzymes, primarily aspartate transcarbamylase from Eschenchia coli. Second, it is used to process chromatograms generated by an amino acid analyzer. It is also used for various research and educational tasks by graduate students and medical students, such as analyzing the sedimentation velocity of proteins in the ultracentrifuge. Many of the kinetic experiments referred to above could not be done without the services of ACME, since they involve trial and error fitting of several parameters to complex functions. The routine processing of chromatograms on ACME introduces accuracy and dependability not otherwise available.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Category 4

Name: Enzmann, D. (P.I.: Zboralske, F.)

Project: SWALLOW

Department: Medical Student

Project Description: The ACME computer is being used to assist in the study of both normal and abnormal motions of the human esophagus during normal and induced swallowing. A series of simultaneous pressure readings in various locations in the esophagus are taken by the use of water filled manometers connected to electrical pressure transducers. The electrical voltages representing the pressure data are sampled and converted to digital values 5 times a second, for each of the pressure measurement sources, using the IBM 1800 computer attached to the ACME computer. The data from a swallow is then analyzed as it is obtained and immediate information is provided back to the experimenter, via the terminal, of the properties of the last swallow. Various summary tables are kept during an experimental run regarding the properties of all the swallows obtained, and are available for a final summary of the experimental data. Initially all the data obtained during an experimental run will be saved on data files to allow different methods of analysis of the data to be explored.

Name: Harris, R. (P.I.: Melges, F.)

Project: PNP

Department: Medical Student

Project Description: This is a project which attempts to demonstrate correlations between the emotions experienced by subjects and their own appraisals of certain aspects of their environments. The concept is that emotions arise when events in the individual's situation come into certain specified relations with his goals.

The study has two parts. The first involves the collection of normative data from normal subjects with respect to six emotions; namely, anger, anxiety, depression, joy, love, and calm. Subjects will be instructed to recall experiences that typify their conception of these states and to describe them on inventories. This data is then used to construct normative profiles of each emotional state and to calculate correlations between different categories of items on the inventories. The second part of the study will employ a number of expectant fathers, who will be tested in the waiting room prior to delivery and again after the birth. This data will be used to determine whether previous normative data is useful in the identification of actual emotional states and to confirm the correlations found in the earlier part of the study.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Levine, R. (P.I.: Kretchmer, N.)

Project: CPS

Department: Medical Student

Project Description: The purpose of this project is to characterize the control of de novo mammalian pyrimidine biosynthesis. The first two enzymes in the pathway, carbamoyl phosphate synthetase and aspartate transcarbamylase are of special concern. This first enzyme is distinct from an isozyme which provides carbamoyl phosphate for the urea cycle. Consequently the pyrimidine-specific enzyme appears earlier in gestation than that which is urea-specific.

ACME has been and continues to be utilized to evaluate and process data obtained during enzyme assays. However this is a relatively routine application. Programs have been devised to study the very complicated kinetics of the carbamoyl phosphate synthetase. Physical interpretations have been drawn from ACME-derived functions and the control mechanism of the enzyme has been greatly clarified. It is hoped that a TV screen will become available so that our kinetic analysis programs can have a visual interaction with the investigator.

Name: Odell, R. (P.I.: Krah1, M.)

Project: CIS

Department: Medical Student

Project Description: The field of investigation is neuroendocrine biological control. Research is being done on the interaction of hormonal and neural events which could act as signals in transient and steady-state operation of physiological systems. The data used is based on experiments with dogs. An attempt is being made to understand biological communication systems and their signals in order to unravel physiological basis of behavior.

Name: Rosenfeld, R. (P.I.: Miller, W.)

Project: CCUPSYCA

Department: Medical Student

Project Description: This is a research project on the psychophysiological adaptation of male patients to the Coronary Care Unit. The goals of the research are to try to establish some relationships between psychological variables and physiological variables, particularly as these latter affect the morbidity and mortality of patients with acute myocardial infarctions. The patients on the Coronary Care Unit are under constant daily observation and have a large number of physiological functions monitored. The study will provide a huge amount of data daily on each patient. The ACME computer will be used to store this data and make a number of statistical manipulations of the data.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Sachs, D. (P.I.: Lederberg, J.)

Project: POPCIT

Department: Medical Student

Project Description: ACME is being used as a text editing system.

Research is being done on population growth rates in various nations, and the resulting data is then correlated with natural resource use in those nations. The purpose is to understand medicine's role in alleviating problems posed by environmental deterioration. ACME's contribution to the project is that of storing text files on the data that has been collected.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Category 11

Name: Belt, D.

Project: HSA

Department: Speech and Hearing

Project Description: This project constitutes a program in large scale hearing and vision screening testing. A professionally staffed mobile test laboratory has been collecting the results of hearing and vision tests performed on elementary school children. Data, which has been taken from four counties in the Bay Area, is being stored on mark-sense or punch cards for about twenty-thousand children and adults. Subsequently, the sample will be enlarged to about sixty-thousand in order to provide a broad base for the analysis of the data.

The need for survey data on the incidence of hearing and vision loss is admitted with Public Health surveys dating back to 1957. It is because of this need that ACME has been employed in processing the results of these hearing and vision tests.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Bunnenberg, E.

Project: CHEM

Department: Chemistry

Project Description: The main goal of this project is to achieve an effective interactive computer-assisted operation of a highly specialized type of spectrophotometer -- a magnetic circular dichrometer. The utilization of organic chemical and especially biochemical applications of magnetic circular dichroism will allow the following:

- 1) An increase in the operational sensitivity of the instrument through the application of digital averaging and smoothing techniques. This is especially important for this instrument because of its inherent single-beam operation;
- 2) The measurement of compounds having relatively strong signals much more rapidly;
- 3) The extraction of quantitatively meaningful spectroscopic parameters from the magnetic circular dichroism spectra. This is of crucial importance for much of the work and requires the implementation of generalized curve deconvolution and fitting programs.

To date, the first goal (1) has been accomplished. The instrument was used to analyze lunar soil extracts for metalloporphyrins. The second goal has been partially realized. In particular, a provisional conclusion was reached: (a) Computer operation greatly decreased the time required to scan through the MD spectrum of a routine sample and (b) computer operation on a routine basis is in fact economical. This second goal, it is anticipated, will be quite useful in increasing the efficiency of measuring MCD spectra and in permitting the application of various mathematical operations to the stored spectra. This should increase the utility of MCD spectrometry to a variety of biochemical problems,

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Cavalli, L.

Project: PAVIA

Department: Genetics

Project Description: The purpose of this project is the simulation of populations. This simulation will be used for making predictions about evolutionary processes. Very often these processes are too complicated for standard analytical procedures; on the other hand, these simulations may indicate ways of recognizing the unimportant variables, and perhaps also indicate ways of simplifying the analytical treatment of populations. At the moment the problem of the relationship between the intensity of selection on a phenotypic character and the effect on the genes that contribute to it is under study.

Programs are also being developed for the statistical analysis for such processes and of a variety of genetic, epidemiological and other types of problems which often require the fitting of complex functions for which we must use the computer. These programs are generally sufficiently different from standard programs to warrant developing.

Name: Costell, R. (P.I.: Wittner, W.)

Project: AHSO

Department: Psychiatry

Project Description: Ninety-five randomly selected, incarcerated sex offenders completed a questionnaire containing relevant demographic data, history of sexual activity, etc. The computer is used for tabulation, analysis and statistical testing of factors of significance in the sexual histories and activities of this population. Results may yield new information relevant to the pathogenesis of these deviations, and establish the validity of this method of data collection and analysis.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Eddy, D. (P.I.: Shumway, N.)

Project: NIFTY

Department: Cardiovascular Surgery

Project Description: The purpose of this project is to develop an optimization technique for control of infectious diseases. Currently the individuals faced with controlling an epidemic have at their disposal a wide range of control measures. These vary from acute treatment of active cases, through public health programs, to immunization programs. A decision must be made as to how much of each mode of control should be applied to minimize morbidity and mortality while not exceeding available resources. Furthermore, the optimal mixture of preventive and curative programs is dynamic and varies as the disease progresses through a population. The multitude of control measures available, the interrelationships between the control variables and the behavior of the disease, and the constraints of limited resources and time present a problem far too complex for the individual mind.

This project will use a mathematical programming technique to find the optimal mixture of control methods to minimize morbidity and mortality while concurrently minimizing the demand for monetary and manpower resources. To demonstrate the technique, the disease Cholera has been chosen as an example. To date, two steps have been accomplished. A mathematical model of the disease has been constructed, and an algorithm which will find the proper weightings of the various control measures has been developed. The third step, which is the purpose of this project, is to implement the program on the ACME computer.

Name: Goldstein, A.

Project: OFFSTUFF

Department: Pharmacology

Project Description: ACME is being used for periodic data summation, statistical tests, and tabular output of results of research in methadone maintenance programs in Santa Clara County. The purpose of this research is to determine the importance of the use of methadone in treating heroin addicts.

Name: Leiderman, P.

Project: KENYA

Department: Psychiatry

Project Description: This project involves the analysis of data collected in a village in Kenya on physical, psychological, and social growth of infants during their first year of life. T-tests, Anova, Cluster analysis, Regression analysis, curve fitting are all being used. The importance of the work lies in changing family life in the underdeveloped world, nutrition, and factors influencing social relationships.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Category 12

Name: Constantinou, C. (P.I.: Govan, D.)

Project: UROL

Department: Urology

Project Description: Studies are being done to improve the clinical appraisal, follow-up and management of patients with neurogenic bladder dysfunction secondary to spinal cord injury or disease. In particular, we are trying to determine the feasibility of utilizing computer-based techniques of information data storage, processing and retrieval in this patient population.

ACME is being used for real-time data acquisition and feedback, and for analysis. Analog data collected from anesthetized animals in surgery is transmitted via the interface box to the 1800 and 2741 output received in the operating room during the experiment.

There are six input channels used simultaneously for action potentials from ureteral smooth muscle, peristaltic pressure waves, urine flow rate, EKG and blood pressure. The analog output is used for driving the XY plotter and providing a reference for servomechanical pump. During experiments, data files are written from the analog inputs for long-term storage and also for short term (up to two weeks) before data reduction.

ACME is also used for statistical analysis of the experimental results utilizing repression, correlation, and convolution subroutines available in the system library. The digital TV and particularly the storage oscilloscope on periodic loan from ACME is used for the rapid display and examination of results.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Gersch, W. (P.I.: Tharp, B.)

Project: SYNTHESI

Department: Neurology

Project Description: The application of time series methods to problems in neurophysiology and medicine is being studied. Specifically, research is being done in the following areas:

- 1) Development and application of new multidimensional autoregressive representation methods of spectral analysis to EEG analysis;
- 2) Development and application of a time series analysis technique to locate anatomical site of epileptic focus from human EEG data taken from scalp electrodes and implanted bipolar depth electrodes during generalized seizure activity;
- 3) Research on modeling feedback paths in the cat's visual system. Experimental data taken in the laboratory of Dr. K.L. Chow;
- 4) A critical computer analysis of a long standing model of vagus control of heart rate;
- 5) Development of a novel Markov chain-symbol pattern recognition procedure applied to recognition of cardiac arrhythmias using R-R interval data.

The evaluation of the electroencephalographic activity during seizures in three patients has been completed and is being compiled for publication. The major emphasis of this rather unique analysis method depends entirely on the facility available at ACME since there was no outside funding support.

Name: Glaze, H. (P.I.: Shumway, N.)

Project: MODEL

Department: Cardiovascular Surgery

Project Description: ACME real-time experiments have been devised to characterize a subset of the time-varying, non-linear, and memory properties of the mammalian vagal-cardiac rate control system. Heart rate data from 20 anesthetized vagotomized dogs have been acquired on-line and programs have been written for quantitation of this data. A mathematical model has subsequently been developed and standard curve fitting techniques used for quantitation of this data. The project was used to complete development of the mathematical model and to obtain hard-copy plots of the results.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Name: Thathachari, Y. (P.I.: Blois, M.)

Project: DOPA

Department: Dermatology

Project Description: This is a study of the structure of melanins.

Melanin is a polymeric pigment widely distributed throughout the plant and animal kingdoms. It has unusual physical and chemical properties. Using ACME as a real-time terminal, models of the molecular structure of melanins were generated starting with the known shape of the subunits and using various criteria for the linking of adjacent units. By watching the output periodically, the flow of the computation could be directed at will. For these generated models, various measurable physical data were computed and compared with the experimentally derived values. Programs were especially written for these calculations and were found to be very promising and fruitful.

Radioactive tracer techniques for the detection and therapy of melanomas are being studied. An attempt is being made to improve on the conventional scanning techniques, making more efficient use of observations with a real-time feed back between the collection of data and their processing. Simulated experiments using ACME are under way to make a choice between alternate techniques. When the choice is made, the project will commission the equipment and the interfacing with ACME.

VIII. REPRESENTATIVE SAMPLE OF USER PROJECT DESCRIPTIONS

Category 13

Name: Cann, H.

Project: GUAT

Department: Pediatrics

Project Description: This project is an investigation of factors which affect frequencies of genes controlling various human heritable characters. The extent to which selection, genetic drift, and migration affect frequencies of certain human genes is being assessed and specific selective factors are being sought. Environmental, cultural, and historical conditions favorable for this type of study have been found in settlements of Mayan Indian descendents in the Lake Atitlan Basin of southwest Guatemala. The local microgeography and mating patterns appear to enforce a high degree of genetic isolation for each of a number of Indian towns and villages ringing Lake Atitlan. These high mortality populations provide the opportunity to study selection on human genetic polymorphisms. Studies of gene frequencies, segregation analysis of polymorphisms and demographic characterization of these sub-populations are being undertaken.

This project will also contribute information on the genetic taxonomy of the American Indian. Families of large size, characteristic of the study population, will afford excellent opportunities for medical genetic investigation of inherited diseases encountered in our field activities and for studies of genetic linkage.

Over 2500 Indians in seven communities on the shores of Lake Atitlan are being studied for heritable blood characteristics, fertility, mortality, and other demographic indicators and socioeconomic variables.

IX. SUMMARY OF COMPUTER RESOURCE USAGE
CORE RESEARCH PROJECTS
Period Covered 4/17/70 - 4/16/71

INVESTIGATOR	DEPARTMENT INSTITUTION	PROJECT TITLE	DIRECT GRANT OR CONTRACT SUPPORT		User Cate- gory	COMPUTER EQUIPMENT		
			Identification Number	Agency Annual Amt.		Terminal Access Minutes (K mins)	Pageminutes (K)	Block Storage (K)
ACME Staff -- Category 7 (FREE)							at .1 cent per pageminute	at .10 cents per block
Acme, P.L.	ACME	ACME classes.	*RR00311	NIH	I	0.190	0.267	0.190
Bassett, R.	ACME	User Consultation.	*RR00311	NIH	7	125.197	308.320	5.555
Beebe, R.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Berman, J.	ACME	System development and testing.	*RR00311	NIH	7	22.952	54.463	0.480
Berman, J.	ACME	System development and testing.	*RR00311	NIH	7	58.847	223.462	4.392
Berna, R.	ACME	System development and testing.	*RR00311	NIH	7	45.327	566.828	5.056
Berna, R.	ACME	System development and testing.	*RR00311	NIH	7	7.085	75.096	2.625
Brotz, D.	ACME	System programming.	*RR00311	NIH	7	3.802	6.195	0.113
Carr, D.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
C.E., IBM	ACME	Terminal testing and diagnosis.	*RR00311	NIH	7	23.517	39.971	0.665
Class, C.	ACME	Operations management. System testing and demonstration.	*RR00311	NIH	7	633.822	1712.839	14.533
Copeland, A.	Computation Center	System development and testing.	*RR00311	NIH	7	0.002	0.004	0.004
Cover, R.	ACME	Daily operations.	*RR00311	NIH	7	57.080	115.675	2.875
Crouse, L.	ACME	Development of real-time medical procedures.	*RR00311	NIH	7	60.370	340.998	50.292
Cummins, D.	ACME	Communication systems development.	*RR00311	NIH	7	15.805	65.557	0.546
Emerson, D.	ACME	File system development.	*RR00311	NIH	7	1.222	1.690	0.069
Feigenbaum, E.	Computation Center	System demonstrations.	*RR00311	NIH	7	0.0	0.0	0.024
Feigenbaum, E.	Computation Center	System demonstrations.	*RR00311	NIH	7	0.0	0.002	0.142
Frey, R.	ACME	File system testing; consulting programs.	*RR00311	NIH	7	19.792	52.128	7.890
George, D.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Girardi, S.	ACME	File testing.	*RR00311	NIH	7	18.630	27.268	4.205
Gold, D.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Granieri, C.	ACME	System development and testing.	*RR00311	NIH	7	0.313	1.194	0.252
Granieri, C.	ACME	System development and testing.	*RR00311	NIH	7	17.552	31.537	0.948
Graph, I.	ACME	System development and testing.	*RR00311	NIH	7	0.822	4.289	0.373
Hale, R.	ACME	System development and testing.	*RR00311	NIH	7	30.615	103.493	3.926
Hundley, L.	ACME	Real-time data acquisition.	*RR00311	NIH	7	64.580	179.036	8.871
Jantgaard, R.	ACME	ACME director.	*RR00311	NIH	7	24.667	45.274	1.723
Job, M.Y.	ACME	Task management.	*RR00311	NIH	7	0.385	1.003	0.031
* Grant supporting more than one user.								

Grant No. RR00311-05
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			Identification Number	Agency		Terminal Access Minutes (k mins)	Pageminutes(k)	
ACME Staff -- Category 7 (FREE)							at .1 cent per pageminute	at .10 cents per block
Kelley, E.	ACME	Daily operations.	*RR00311	NIH	7	62.563	184.885	0.316
Lederberg, J.	Genetics	Text editing.	*RR00311	NIH	7	7.770	25.026	9.891
Lederberg, J.	Genetics	Program development.	*RR00311	NIH	7	129.320	480.819	56.642
Lederberg, J.	Genetics	System tests.	*RR00311	NIH	7	13.262	26.930	0.900
Lew, Y.	ACME	System development and testing.	*RR00311	NIH	7	7.832	15.065	0.553
Martin, C.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Matous, J.	ACME	Daily operations.	*RR00311	NIH	7	0.512	1.348	0.319
Miller, S.	ACME	System development and testing; user consultation.	*RR00311	NIH	7	29.502	65.559	4.153
Miller, S.	ACME	System development and testing.	*RR00311	NIH	7	0.160	0.376	0.430
Miller, C.	ACME	Text editing.	*RR00311	NIH	7	0.345	0.552	0.041
Miller, C.	ACME	Text editing.	*RR00311	NIH	7	2.420	4.418	0.814
Miller, J.	ACME	Assembler development.	*RR00311	NIH	7	0.012	0.016	0.024
Miller, J.	ACME	File development.	*RR00311	NIH	7	0.067	0.136	0.240
Montgomery, R.	Computation Center	Text editing.	*RR00311	NIH	7	0.0	0.0	0.024
Moore, J.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Osborne, D.	ACME	System tests.	*RR00311	NIH	7	18.517	37.123	1.589
Osterby, O.	ACME	System development and testing.	*RR00311	NIH	7	2.067	4.037	0.475
Pearson, J.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Plasch, G.	ACME	Text editing.	*RR00311	NIH	7	2.350	4.624	3.798
Public, J.Q.	ACME	Development and storage of PUBLIC files.	*RR00311	NIH	7	9.785	24.288	7.795
Reynolds, W.	Genetics	System development and testing.	*RR00311	NIH	7	32.660	260.318	1.376
Richardson, R.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Rieman, J.	ACME	Daily operations.	*RR00311	NIH	7	5.740	9.268	0.312
Saal, A.	ACME	Program development.	*RR00311	NIH	7	2.535	3.760	0.053
Salisbury, A.	ACME	File system development.	*RR00311	NIH	7	0.0	0.0	0.006
Sanders, G.	ACME	User consultation.	*RR00311	NIH	7	11.887	35.745	0.853
Sanders, W.	ACME	Hardware and software development.	*RR00311	NIH	7	0.595	1.391	2.780
Sandoval, C.	ACME	Daily operations.	*RR00311	NIH	7	63.632	148.109	3.001
Scharf, G.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002

* Grant supporting more than one user.

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ACME Staff -- Category 7 (FREE)								
Schlumberger, A.	ACME	Program development.	*RR00311	NIH	7	0.130	0.179	0.009
Smith, P.	ACME	System tests by IBM system engineer.	*RR00311	NIH	7	0.105	0.140	0.518
Sutter, J.	ACME	Daily operations.	*RR00311	NIH	7	74.742	168.867	4.830
Tice, B.	Computation Center	System development and testing.	*RR00311	NIH	7	0.0	0.0	0.002
Vallee, J.	Computation Center	Automation of Stanford Blood Bank.	*RR00311	NIH	7	0.075	0.099	0.038
Vantassel, J.	ACME	Daily operations.	*RR00311	NIH	7	93.105	208.614	1.746
Whitner, J.	ACME	Statistical program development.	*RR00311	NIH	7	0.0	0.0	1.012
Whitner, J.	ACME	Statistical program development.	*RR00311	NIH	7	76.095	278.043	6.378
Wiederhold, G.	ACME	System testing to make sure it meets old and new specifications.	*RR00311	NIH	7	5.562	9.392	6.283
Wiederhold, G.	ACME	Usage statistics, accounting and yearly reports.	*RR00311	NIH	7	0.547	0.768	8.999
Wiederhold, G.	ACME	Developing continuing system modeling program.	*RR00311	NIH	7	7.162	15.820	4.664
Wiederhold, G.	ACME	Demonstrations for visitors to ACME.	*RR00311	NIH	7	8.757	15.216	3.120
Wiederhold, V.	ACME	Editing the P-/ACME manual.	*RR00311	NIH	7	51.677	123.068	10.771
Wilson, D.	ACME	Development of real-time medical procedures.	*RR00311	NIH	7	15.872	52.585	1.743
TOTAL						1969.938	6163.973	262.117

Biomedical Research,	Real time -- Category 1 (TOTAL)	INDIVIDUAL RESEARCH PROJECTS			1		at .01/2 cent per pageminute	at .10 cents per block
Racop, V.**	Genetics	Operating quadrupole mass spectrometer.	*NGF5020	NASA	1	115.705	914.534	32.850
DeGrazia, J.	Nuclear Medicine	Analysis of data collected through a metabolic gas analyzer.	RG69-5	National Academy of Science	1	8.295	23.953	1.428
DeGrazia, J.	Nuclear Medicine	Development of radioisotope techniques for the evaluation of differential kidney function.	None	Public Health Services -- San Francisco	1	61.412	218.453	5.474
Dong, E.	Cardiovascular Surgery	Examination of cardiac surgery patient data.	None	University Funds	1	64.200	267.466	10.065
Dong, E.	Cardiovascular Surgery	Hemodynamic studies in laboratory animals; effects of heart transplantation.	HE08696	USPHS	1	6.342	17.703	0.907
* Grant supporting more than one user. **part of core research.								

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			Identification Number	Agency Annual Amt.		Terminal Access Minutes (K mins)	at .01/2 cent per page minute	Block Storage(K)
Biomedical Research, Dorg, E.	Real time -- Category 1 (TOTAL) Cardiovascular Surgery	General data reduction.	HEL2108	USPHS	1	10.605	102.340	5.066
Click, D.	Pathology	Laser-microprobe element analysis.	HE06116	NIH	1	45.247	157.999	1.957
Hawavalt, P.	Biological Sciences	Use of radioisotope tracers in studies of molecular biology of cell growth and repair of damage to genetic material.	GMO9901	NIH	1	67.817	282.907	3.791
Harrison, D.	Cardiology	On-line cardiac catheterization data analysis; recognizing abnormal EKG complexes.	HE09058	NIH	1	46.842	186.240	22.280
Kennedy, D.	Biological Sciences	Analysis of neurophysiological data.	NBO2944	NIH	1	0.0	0.0	0.024
Kohen, R.	Pediatrics	Diagnosis and treatment of status balance impairment in educationally handicapped school children.	OR0701263	U.S. Office of Education	1	74.475	408.066	6.037
Kopell, B.	Psychiatry	Studies of Averaged Evoked Responses (AER's)	MIL0976-07	NIH	1	14.895	67.269	1.551
Lederberg, J.	Genetics	Automation, operation, and service on the Finnigan 1015 mass spectrometer.	*NCR5020	NASA	1	0.0	0.0	0.002
Lederberg, J.	Genetics	Program instruction; work area for programming and instrumentation use practice.	*NCR5020	NASA	1	0.0	0.0	0.036
Liebes, S.	Genetics	Relationship of mass spectroscopy to organic materials.	*NCR5020	NASA	1	0.0	0.0	0.015
Mazze, R.	Anesthesia	Computer programming to study renal failure in patients.	None	University Funds	1	12.635	37.092	0.646
Morris, S.	Genetics	Analyze the incorporation of radiolabeled amino acids into brain proteins.	GMO0295	NIH	1	39.257	164.720	0.892
Pauling, L.	Chemistry	Research on the molecular basis of mental disease.	MIL8149	NIMH	1	97.910	440.031	15.924
Reynolds, W.	Genetics	Automation in mass spectrometer instrumentation systems.	*NCR5020	NASA	1	11.087	21.515	5.363
Smith, N.	Anesthesia	Calculating cardiovascular data from normal patients.	*GML2527	NIH	1	10.862	20.367	0.924
Smith, N.	Anesthesia	Data file storage; statistical analyses.	*GML2527	NIH	1	0.0	0.0	0.013
Smythe, H.	Psychiatry	Real-time analysis of electroencephalographic data in all-night sleep EEG's.	MIL3060	NIH	1	1.330	1.861	0.180
Stinson, E.	Cardiovascular Surgery	Analysis of hemodynamic data in dogs.	None	Bay Area Heart Research Committee	1	3.372	50.642	0.545
Suesman, H.	Pathology	Establishment of an automated data processing system for use in clinical pathology laboratories at Stanford University.	None	University Funds	1	32.905	175.144	2.473
Tucker, R.	Genetics	Computer system to control mass spectrometer - GLC apparatus; data analysis.	*NCR5020	NASA	1	0.322	0.464	6.081

* Grant supporting more than one user.

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		Real time -- Category 1 (TOTAL)				at .01/2 cent per page/minute	at .10 cents per block
Biomedical Research							
Wilson, D.	Biological Sciences	Analysis of neurophysiological data.	NB07631	NIH	1	0.0	0.024
						725.519	124.548
Biomedical Research							
		Routine Terminals -- Category 2 (TOTAL)				at .1 cent per page/minute	at .10 cents per block
Aronow, L.	Pharmacology	Laboratory data analysis related to anti-cancer drugs.	None	University Funds	2	2.115	0.266
Asasykin, T.	Urology	Control of renin secretion.	AM13548	NIH	2	7.600	0.536
Atkinson, M.	Stanford Medical School - Admissions Committee	Matching the medical students' clerkship requests to the number of clerkships available.	None	University Funds	2	7.882	0.228
Atkinson, M.	Stanford Medical School - Admissions Committee	Assist Admissions Committee in selecting new Medical School classes.	None	University Funds	2	11.922	1.770
Atkinson, M.	Stanford Medical School - Admissions Committee	Financial study to see if the Yale medical student loan system for paying for medical school is applicable to Stanford.	None	University Funds	2	2.317	0.026
Bagshaw, M.	Radiology	Research on patients with radiation therapy.	*CA05838	NIH	2	38.525	13.526
Bagshaw, M.	Radiology	Radiation dosimetry.	None	American College of Radiology	2	0.0	0.020
Baldwin, R.	Biochemistry	Characterization and helix of short DNA helices.	AM04763	NIH	2	1.922	0.752
Baueck, G.	Medicine - Infectious Diseases	Radiotherapeutic treatment of lymphomas.	*CA05838	NIH	2	4.315	2.095
Bergstresser, P.	Dermatology	Computation of blood flow in fingers and toes.	None	Special Funds	2	0.255	0.065
Bodmer, W.	Genetics	Human white blood cells and population genetics.	GML4650	NIH	2	119.182	35.665
Brown, B.	Community and Preventive Medicine	Conduct various statistical computations in support of research in the Department of Anesthesia.	*GML2527	NIH	2	49.080	17.444
Brown, B.	Community and Preventive Medicine	Computations done in support of a multitude of public health research projects.	RS5353	University Funds	2	22.455	8.596
Brown, B.	Community and Preventive Medicine	Development of new biostatistical techniques.	RS5353	University Funds	2	7.205	2.279
Brutlag, D.	Biochemistry	Studies on the role of divalent metal ions in the reaction mechanism of the enzyme DNA polymerase.	*GM07581	NIH	2	18.425	1.383
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			Identification Number	Agency	Current Annual Amt.	Terminal Access Minutes (x mins)	Page/minutes (x)	Block Storage (K)
Biomedical Research,	Routine Terminals	Category 2 (TOTAL)						
Cady, P.	Psychiatry	Studying thyroid function in human subjects of varying genetic backgrounds subjected to stress.	MHI4528	NIMH	\$ 26,464.33	33,592	75,383	8,787
Char, P.	Radiobiology	Simulating the cellular population growth pattern on the computer.	*CA4542-13	NIH	25,964.23	2,412	5,659	0.110
Chase, R.	Surgery	Evaluation of facial growth in cleft palate children and determination of velopharyngeal competence.	DE02803	NIH	17,404.53	2,200	4,840	0.482
Clayton, R.	Psychiatry	Effects of steroids and hormones of RNA activity on the brain.	*H00801	NIH	46,712.09	2,085	3,065	2.753
Comer, R.	Psychiatry	Experimentation relating neuroendocrine function to behavior.	HD02881	NIH	95,267.43	13,725	46,938	0.884
Cooper, J.	Psychiatry	Investigation of biochemical correlates of neonatal sexual differentiation in rats.	*H000301	NIH	46,710.09	11,430	44,115	0.526
Crowley, L.	Surgery	Studying results of antibiotic agents instilled into a wound during surgery.	None	Bristol Labs	8,127.07	7,742	17,403	1.564
Doering, C.	Psychiatry	Investigating the causal connections, on a biochemical level, between hormones and behavior in stress.	*H000301	NIH	46,710.09	3,722	7,109	1.789
Fletcher, G.	Anesthesia	Statistical analysis of laboratory results from in-vivo and in-vitro studies of uptake, metabolism, and elimination of sedative drugs.	None	John A. Hartford Foundation	3,809.21	1,382	5,155	0.024
Forrest, W.	Anesthesia	Development of an inexpensive system of quality and quantity control of large masses of clinical data from several sources.	None	University Funds	Operating Account	1,130	2,100	15,170
Forrest, W.	Anesthesia	Maintenance of records concerning surgical operations, and for reports concerning these operations.	None	University Funds	Operating Account	2,080	7,300	0.772
Forrest, W.	Anesthesia	Automation of the monthly scheduling of doctors for "on call" duty.	None	University Funds	Operating Account	12,020	68,425	1.634
Forrest, W.	Anesthesia	Development of an inexpensive system of quality and quantity control of large masses of clinical data from several sources.	None	University Funds	Operating Account	99,670	600,484	44,378
Friedland, G.	Radiology	Determination of the action of the gastric sling fibers.	GM01707	NIH	7,383.41	8,852	31,525	1.858
Fries, J.	Medicine - Immunology	Establishment of a large databank of clinical information and exploration of multiple uses of such stored information.	None	University Funds	Operating Account	55,505	133,155	12.833
Gollistein, A.	Pharmacology	Mechanism of the action of narcotics and the fundamental aspects of narcotic addiction.	*MHI3963	NIH	119,928.41	7,420	16,877	0.531
Gollistein, A.	Pharmacology	Statistical procedures for laboratory studies on morphine.	*MHI3963	NIH	119,928.41	10,945	20,329	0.269
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Biomedical Research, Goldstein, D.	Routine Terminals Pharmacology	Category 2 (TOTAL) Establishment of essential parameters for enzyme kinetics in inhibition of flavin enzymes by barbiturates.	*MH13963	NIH	2	20.130	51.415	0.492
Herzenberg, L.	Genetics	Collating multiple mouse immunoglobulin levels; storage of data and direct anti- serum production.	HD01287	NIH	2	0.325	0.800	3.880
Herzenberg, L.	Genetics	Collating multiple mouse immunoglobulin levels; storage of data and direct anti- serum production.	HD01287	NIH	2	0.582	2.350	0.431
Herzenberg, L.	Genetics	Collating multiple mouse immunoglobulin levels; storage of data and direct anti- serum production.	HD01287	NIH	2	3.680	5.888	1.220
Hogness, D.	Biochemistry	Analysis of experimental data on chromosome fragments in Drosophila.	AM07535	NIH	2	3.775	7.777	0.185
Huberman, J.	Biochemistry	Reducing data from equilibrium dialysis.	*CM07581	NIH	2	0.722	1.296	0.270
Jovita, T.	Biochemistry	Data reduction and generation of systems for electrophonic separations based upon theoretical models.	*CM07581	NIH	2	1.782	3.271	0.196
Kallman, R.	Radiobiology	Analysis of data relating to the survival of experimental tumor cells to the dose of irradiation received by the cells.	CA3353	NIH	2	1.019	24.110	0.032
Kendig, J.	Anesthesia	Research on data relating to the effects of drugs on skeletal muscle-resting potential.	*GM12527	NIH	2	1.582	2.123	0.046
Kessler, S.	Psychiatry	Analysis of mating speed experiments.	MF14364	NIH	2	4.475	6.683	0.233
Koran, L.	Psychiatry	Relationship of student test scores to other variables.	None	University Funds	2	0.0	0.0	0.004
Kraemer, H.	Psychiatry	Biostatistical analysis of various psycho- logical data.	None	University Funds	2	41.297	84.580	6.980
Kriss, J.	Nuclear Medicine	Calculation of plasma volume, blood volume and red cell mass in patients who receive radioactive tracer material.	AM07642	NIH	2	0.007	0.008	0.021
Kriss, J.	Nuclear Medicine	Studies on the pathogenesis of Graves' disease, and the effects of X-ray therapy upon thyroid function.	AM07642	NIH	2	23.255	63.099	3.154
Laipis, P.	Genetics	Experiments on sucrose and cesium chloride gradients in the ultracentrifuge.	GM14108	NIH	2	0.017	0.035	0.153
Lamb, E.	Gynecology and Obstetrics	Calculation of relative potency and con- fidence limits of total gonadotropin activity of human urine extracts.	None	University Funds	2	7.987	16.340	1.134
Lederberg, J.	Genetics	Statistical and miscellaneous programs used by the Genetics Department.	*CM00295	NIH	2	0.057	0.125	1.495
Lederberg, J.	Genetics	Processing of chromosome data.	None	University Funds	2	0.137	0.284	0.001
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		Category 2 (TOTAL)					at .1 cent per page minute	at .10 cents per block
Biomedical Research	Routine Terminals				2			
Lederberg, J.	Genetics	Generating of chemical structures and displays on the Sanders 720 by interfacing.	*GRO502	NASA	2	0.212	0.401	0.150
Lehman, I.	Biochemistry	Statistical analysis of experimental data.	GMO6196	NIH	2	2.077	3.654	0.118
Leiderman, P.	Psychiatry	Studies of maternal behavior in non-human mammals.	HD02636	NIH	2	2.440	4.481	0.427
Levinthal, E.	Genetics	Photointerpretation and enhancement.	*GRF5020	NASA	2	0.0	0.0	0.018
Liebes, S.	Genetics	Investigating means of data processing for interpretation of photographic data from the Mariner Mars 1971 Orbiter program.	*GRF5020	NASA	2	0.0	0.0	0.008
Liebes, S.	Genetics	Design aspects of imagery system to be landed on surface of Mars in course of Viking 1973 Lander Mission.	*GRF5020	NASA	2	0.0	0.0	0.008
Lieberman, M.	Psychiatry	Measurement of the efficacy of "small groups" in education.	None	University Funds	2	0.0	0.0	0.008
Lorenson, M.	Pharmacology	Molecular mechanisms that control sheep-heart enzyme and carbohydrate metabolism.	AIO4214	NIH	2	0.0	0.0	0.032
Luttscher, J.	Medicine - Metabolic Research	Secretion and metabolism of adrenal hormones.	AM03062	NIH	2	17.912	35.260	1.903
Luzzati, L.	Pediatrics	Study family with chromosomal mosaicism in three generations.	CRGS407	National Foundation	2	6.297	13.117	2.561
Maffly, R.	Medicine - Lipid Research	Evaluation of acid-base disorders in patients.	None	University Funds	2	4.867	21.476	1.462
Maffly, R.	Medicine - Lipid Research	Relationship of metabolism to sodium transport.	67627	American Heart Association	2	8.547	29.776	0.283
Melges, F.	Psychiatry	Understanding psychotic processes.	MM29163	NIH	2	7.755	12.549	2.403
Miller, R.	Community and Preventive Medicine	Biostatistical research and/or education.	GMO0025	NIH	2	0.002	0.0	0.013
Miller, R.	Community and Preventive Medicine	Teaching of courses in biostatistics.	GMO0025	NIH	2	0.722	3.493	0.484
Morris, R.	Surgery	Reduction of cell death of a target cell monolayer by specifically sensitized lymphocytes.	GMO1922	NIH	2	2.310	3.751	0.070
Nall, L.	Dermatology	Etiology of chronic skin disease.	None	University Funds	2	4.110	5.784	1.410
Nelsen, T.	Surgery	Clinical cancer research record protocols and data for storage and analysis.	*AO8122	NIH	2	0.450	0.977	1.929
Nye, W.	Medical Microbiology	Statistical calculations and bibliography compilations in immunochemistry.	*AIO8211	NIH	2	2.800	4.493	0.214
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Biomedical Research	Routine Terminals	Category 2 (TOTAL)							
Nye, W.	Medical Microbiology	Immunohistochemistry statistical calculations and bibliography compilations.	*A108211	NIH	\$ 7,270.21	2	4,322	7.174	0.388
Ostrom, L.	Biochemistry	Analysis of data obtained from experiments with the enzyme glycyl-TRNA synthetase.	GM13235	NIH	63,356.29	2	1,650	2.303	0.095
Payne, R.	Medicine - Hematology	Extending leukocyte and/or tissue antigen classification by serologic and genetic analysis.	HR03365	NIH	30,848.39	2	20,262	130.808	6.277
Petralli, J.	Medicine - Infectious Disease	Antibiotic-sensitivity testing in the treatment of specific infections.	None	University Funds	Operating Account	2	148,615	309.744	40.874
Rapp, W.	Medicine	Immunological determination of the gastric antigenic esterase VI A in gastric juices of patients with different gastric diseases.	AM06971	NIH	14,131.20	2	1,525	2.289	0.277
Reaven, G.	Medicine - Lipid Research	On-line display procedure to determine physi- ological models of metabolic processes.	AM05972	NIH	13,755.34	2	73,595	152.182	4.250
Reaven, G.	Medicine - Lipid Research	Relationship between glucose, insulin, and triglyceride kinetics and diabetes mellitus and arteriosclerosis.	HR08506	NIH	17,314.40	2	7,430	20.504	0.822
Reitan, J.	Anesthesia	Processing cardiac interval timing to monitor contractile state under varying loads and drugs.	GM00862	NIH	18,161.96	2	0.207	0.702	3.115
Reynolds, W.	Genetics	Text management to support engineering instrumentation.	*NGF5020	NASA	248,510.70	2	0.112	0.174	2.832
Reynolds, W.	Genetics	Text editing for computer instrumented checkout of scientific instruments designed to fly on the Viking 75 mission to Mars.	RC0446200	NASA	3,040.48	2	0.0	0.0	0.005
Robertson, W.	Pediatrics	Urinary analysis; data on immunoglobulin concentration.	AT8490	NIH	11,210.28	2	5,330	9.246	1.917
Rosenberg, L.	Medical Microbiology	Statistical analyses and calculations on the serum complement in mice.	AT09341	NIH	12,328.36	2	4,185	8.966	1.288
Rosenberg, S.	Medicine - Oncology	Correlating drug responsiveness in cancer patients.	*CA08122	NIH	68,595.72	2	42,730	159.424	5.834
Russell, A.	Biochemistry	Routine calculations on enzyme assays.	*GM07581	NIH	166,961.80	2	4,302	10.717	0.277
Schneiderman, L.	Medicine - Ambulatory	Clinical research data indexing.	None	University Funds	Operating Account	2	0.577	2.471	4.365
Schubert, S.	Speech and Hearing	Analysis of signal waveforms by Fourier, correlational and similar techniques.	NS7554	USPHS	11,525.79	2	0.0	0.0	0.012
Shaw, N.	Orthopedic Surgery	Calculations of vehicle dynamics, occupant kinematics, and loading for multidiscipli- nary investigation of automobile crashes.	PH11-7583	National Highway Safety Bureau	2,603.01	2	0.575	0.809	0.031
Simpson, J.	Physics	Design work for a superconducting magnetic beam transport channel for use in pion cancer therapy.	GP2708	NSF	1,692.83	2	32,340	129.585	1.340

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			Identification Number	Agency		Terminal Access Minutes (± mins)	Pageminutes (K)	Block Storage(K)
Biomedical Research,	Routine Terminals	Category 2 (TOTAL)			2		at .1 cent per pageminute	at .10 cents per block
Smallwood, R.	Medical Facilities Planning	Design of Stanford Medical Care Facilities.	None	University Funds	2	0.930	1.820	4.243
Smith, J.	Medical Microbiology	Development of a system for automatic classification of human chromosomes.	69-2053	NTH	2	10.455	38.894	0.379
Smith, J.	Medical Microbiology	Development of a system for automatic classification of human chromosomes.	69-2053	NTH	2	0.0	0.0	0.003
Smith, K.	Radiology	Data analysis of sedimentation patterns of DNA following X-irradiation.	CA10372	NTH	2	13.064	23.169	0.286
Solomon, G.	Psychiatry	Relationship of various forms of stress and environmental manipulation to immunity.	None	University Funds	2	2.640	4.638	0.187
Spevack, A.	Psychiatry	Analysis of data from behavioral and neuro- physiological experiments in monkeys and cats.	MI08304	NTH	2	2.745	8.313	0.996
Stark, G.	Biochemistry	Analysis of data on enzyme experiments and processing of chromatograms generated by an amino acid analyzer.	GM17788	NTH	2	6.462	10.548	2.066
Stocker, B.	Medical Microbiology	Genetics and physiology of salmonella typhimurium.	AI08942	NTH	2	5.962	15.369	8.832
Strickland, R.	Medicine - G.I. Division	Analyzing gastric secretory function tests.	AM05418	NTH	2	0.0	0.0	0.421
Stuedeman, D.	Genetics	Capital equipment inventory.	*NGH5020	NASA	2	2.560	5.070	1.997
Sussman, H.	Pathology	Statistical analysis of the data generated in the clinical lab.	None	University Funds	2	27.477	40.971	1.174
Swartout, W.	Community and Preventive Medicine	Evaluation of the effects of air pollution on student health.	None	University Funds	2	0.0	0.0	0.010
Vosti, K.	Medicine - Infectious Diseases	Cross-tabulating variables associated with bacterial infections.	AI03638	NTH	2	2.557	4.620	2.079
Weissman, I.	Pathology	Statistical analysis and data handling.	AI09072	NTH	2	11.340	19.389	0.654
Whitcher, C.	Anesthesia	Computerization of the anesthesia call schedule.	None	University Funds	2	0.037	0.176	0.375
Wilson, J.	Regional Medical Program	Development of a county wide (Santa Cruz) registry on stroke patients; development of a population base for study and analysis.	None	Stanford Stroke Program	2	45.222	211.975	4.743
Wilson, J.	Regional Medical Program	Analysis of data from registry on stroke patients.	None	Stanford Stroke Program	2	2.505	7.001	0.123
Zackheim, H.	Dermatology	Determination of serum copper and cerulo- plasmin levels in psoriasis patients.	None	Hartford Foundation	2	0.0	0.0	0.268
* Grant supporting more than one individual user.			SUB-TOTAL			1222.173	3862.556	35.280

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